

ADDITION
4 JUNE 1943
900 acres

5332
900
1270

BOISE BASIN EXPERIMENTAL FOREST

Introduction

An important addition to the research facilities of the Inter-mountain Forest and Range Experiment Station was consummated in May 1942 in the passage by the Senate of H.R. 4733, providing for the addition of 900 acres of forest land to the Boise National Forest "for experimental purposes." The purpose of this report is to describe the area and to formally establish its place as a unit or division of the Boise Basin Experimental Forest. The Experimental Forest as established in 1933 consisted of 5,291 acres in the drainages of Bannock and Pine Creeks and is described in the report of that year (typed on atlas-size paper and referred to as the "1933 atlas report"). Many of the statements in that report apply equally well to the new addition, so that the present report will be somewhat in the form of a supplement to the former, following the same outline but presenting facts peculiar to the new area.

I. The Relation of the Area to the Research Work of the Region and Its Needs in Connection Therewith

The Boise Basin Branch Station and Experimental Forest is the only field center so far established for the study of forest management problems of the Intermountain Region. The need for research in ponderosa pine, the region's most valuable and important timber type, and the advantages of the Boise Basin site are discussed in the 1933 atlas report. The particular value of the new tract for forest research lies in its stands of second-growth ponderosa pine, which are not found to any extent in the original experimental forest. Such stands are characteristic of a considerable area in Boise Basin and elsewhere in central Idaho where cutting took place in the early days of settlement. More recent cutting areas, except where devastated or where a heavy stand was reserved, will eventually exhibit a similar appearance. They represent the type of forest that management will have to deal with on a large scale in the future. Experiments in timber stand improvement, determinations of growth and yield and of silvical facts peculiar to second-growth stands, and eventually tests of harvest cuttings in such stands should be part of the program of research in ponderosa pine management. The tract serves as an excellent "laboratory" for such studies. The Boise Basin Branch Station headquarters lies within the area and several studies have already been initiated on the administrative site.

II. Description of Area

The 900-acre tract consists of all of Section 22, the $W\frac{1}{2}$, $W\frac{1}{2}$, Section 23, the $W\frac{1}{2}$, $NE\frac{1}{4}$, Section 27, and the $W\frac{1}{2}$, $NW\frac{1}{2}$, $NW\frac{1}{4}$, Section 26, Township 6 North, Range 5 East, Boise Meridian (see map). It is the northwest portion of the block of four sections around Idaho City which was excluded when the Boise Basin Addition was made. It includes, in the southern portion, the 120-acre administrative site on which the B.B.S. buildings are located. It lies to the northwest of the village of Idaho City; at the nearest point the tract is only $1\frac{1}{8}$ mile from the village limits; the station buildings are 1 mile by road from the Idaho City postoffice. The gross area includes (besides the administrative site) 80 acres of state land - two forties along the northern edge of the tract - and 40 acres of private land in the southeast corner. The remainder was public domain. The net area in the unit now in federal ownership is thus 780 acres. The land adjoining on the north and west

is of state and private ownership but within the gross boundary of the Boise National Forest. The Idaho City Cemetery tract and public land lie to the south; public land to the east.

III. Acreage by Dominant Cover Types

The tract has never been covered by a timber survey, and only a preliminary map has been made from a quick reconnaissance by the compass-pacing method. Therefore no precise figures are available on either type acreages or timber stand and volume. The type is predominantly ponderosa pine, with a few small patches of Douglas-fir, and some open areas of grass and brush due to poor site or to past clearing and fire. A rough estimate (allowing for some patches not shown on map) would class the acreage as follows:

Type	Ownership			Total <i>Acres</i>
	National Forest	State	Private	
Ponderosa Pine:				
Commercial (with sawtimber)	50	10	-	60
Commercial (second-growth)	640	70	10	720
Grass and Brush	90	-	30	120
Total	780	80	40	900

IV. Physical and Climatic Conditions

(a) Elevation. The absolute elevation ranges from about 4,000 to 4,700 feet. The tract reaches nearly to the valley floor of Elk Creek and Moores Creek (elevation 3,950 feet) at the southeast corner and rises about three-fourths of the way to the Middle Ridge summit to the northwest.

(b) Topography. The main feature of the topography is the V-shaped canyon of Slaughterhouse Gulch, running diagonally from the northwest to the southeast corner of the tract. An intermittent stream flows in the gulch from about November through June. Just south of the area the stream flows into Elk Creek, a large branch of Moores Creek, which is the main stream of Boise Basin and a tributary of the Boise River. The canyon is steep-sided except in the extreme lower and the upper portions, where gentler slopes and a rolling type of topography prevail. The parts of other small drainages included in the block are similar in character. Such few rock outcrops as are present do not extend above the general surface of the ground.

(c) Soils. The soil is a residual, gravelly, sandy loam derived from the easily disintegrated underlying granite - the same as on the Bannock Creek area.

(d) Climate. The average annual precipitation at Idaho City to date is 21.34 inches, of which more than one-half comes as winter snowfall. The annual mean temperature is 45.5°F. Temperatures as high as 108° and as low as -40° have been recorded. The average frost-free period is from June 12 to September 8, or 85 days, but there are occasionally frosts also in July and August.

V. Forest Value

(a) Silvicultural types. A large part of the area is of nearly pure ponderosa pine type, with only an occasional Douglas-fir tree, but on some northerly slopes the proportion of fir is larger, probably high enough to form a fir type in small patches. No other tree species is present, except a few aspen and, along streams, a very few northern black cottonwood.

Most of the area was cut over or at least cut into for lumber and fuel during the early mining boom days in the Basin from 1865 on. Evidently

the form and progress of cutting and the conditions of climate were such as to favor the establishment of reproduction, as the lower portion of the area is now covered with a fairly even-aged stand about 70 years old. In the upper portions (farther from Idaho City) the stand is more irregular and the age of the groups of poles younger, down to about 40 years. Scattered relict trees of the original virgin stand are to be found throughout the area. In some of the less accessible places, as along the western boundary, there was apparently little or no cutting and the stand is predominantly mature or overmature.

The density of the stand varies widely. In some sheltered draws and northerly slopes the pole stand is nearly fully stocked (probably overstocked in small groups or patches). On many southerly and westerly slopes, especially where the soil is thin, the trees are scattered and, as a result, coarse and limby in form. Site quality varies from III to V, predominantly III and IV, as is common in this territory.

On the whole there is less undergrowth than in many ponderosa pine stands in central Idaho. Under the dense second-growth stands there is usually only a light low cover of pine grass, spiraea, and other plants common to the type. As clumps or as patches in openings may be found snowbrush, willow, chokecherry, serviceberry, and ninebark. On the exposed southerly slopes and in the "grass and brush" type the prevailing ground cover is downy chess (cheatgrass), with small clumps of bitterbrush and sagebrush. Along streams willow, mountain alder, and red-osier dogwood are the most abundant shrubs.

(b) Amount and class of timber types. See III above for estimated acreage. Volume and stand data lacking.

(c) Merchantability. There is but little timber on the tract merchantable for sawlogs under present-day standards. The second-growth trees are too small and limby, and many of the old-growth trees are limby specimens apparently rejected at the previous times of logging. A few mature trees are of good quality but they are too scattered and inaccessible for commercial logging; after the development of additional roads it may be feasible to truck them out to a mill in Idaho City or elsewhere. Essentially all of the timber is merchantable for fuelwood and poles, and this is the market that must be looked to for disposal of any cut material in the early future.

In general the timber on the area appears to be comparatively healthy. Rot is probably prevalent in some of the old decadent trees but is negligible in second-growth trees of this age. Mistletoe is practically absent in pine, and the amount of Douglas-fir so infested is not serious. Bark-beetles continue to cause losses of an endemic character, with both mature and immature trees here and there dying every year, but the infestation seems to be on the decline. In about 1930-32 several groups of second-growth pines up to a half-acre in size were killed by a combination of Ips spp. and Dendroctonus spp., but recent losses have been only scattered individual trees.

(d) Value of timber as protection to watershed. The maintenance of a plant cover of trees and associated vegetation is important on this area as on other similar portions of the Boise River Watershed, to help insure a regular flow of clear water for irrigation in the valley. However, it is not a particularly critical area in this respect. The administration of the unit as part of the experimental forest should have beneficial effects in preserving an adequate plant cover.

(e) Distribution, extent, and character of reproduction. Since the stand is predominantly of pole size, just becoming of such size that it can produce substantial crops of seed, there is a general deficiency of younger reproduction. This is of course most evident on the exposed slopes where the stand is scattered. In spots near old-growth trees, saplings and poles of various ages may be found in moderate numbers. Throughout the area great numbers of pine seedlings which started in 1941 are still living and are likely to play an important role in future restocking of the area. Unfortunately their numbers are few and the environment is unfavorable to survival and growth in the larger openings and on exposed slopes where they are most needed. The proportion of species of reproduction is about the same as that of the larger stand.

(f) Extent and severity of fire damage. At least since the time of origin of the present second-growth stand, fire damage has been light to negligible. Old trees show ancient fire scars, and fires may have been partly responsible for the treeless openings and the scattered character of the stand in places, but whatever took place was so long ago that but little visible evidence remains. Spot fires have occurred more recently but were controlled with little spread.

(g) Suitability of the area for practical forest management. Because of the limited area and the character of the present stand, the tract is not suited at this time for organization as an operating unit, such as the Bannock and Pine Creek divisions of the experimental forest. Mature trees may be harvested as opportunity permits but the amount of cut will be negligible. Eventually, as the second-growth stand matures, systematic harvest cuttings doubtless will be made under some study plan and the production will be correlated with that of the rest of the working circle. In the nearer future, it is probable that selected portions of the area will be devoted to specific tests and demonstrations of timber stand improvement and to other experiments. As a by-product of such work, considerable quantities of fuel wood will be cut and marketed locally.

(h) Character and extent of present uses of timber. Some residents of Idaho City were particularly concerned, when the addition was being considered, about the possible effect on availability of fuel wood from this area so close to town. Actually the use of timber was very light in recent years - occasionally one or a few dead or living old-growth trees which were accessible to roads were taken out for wood, and a few cords of second growth were being cut by one or two residents annually up to about 1930. In general, the remaining mature trees are inaccessible and wood from second growth (known as "bull pine" or "jack pine") is not favored locally as long as old growth is available. In two seasons wood from stand improvement plots near the Station has been sold at a nominal price to Idaho City users. As to the future, it is probable that under experiment station management additional roads will be built and more wood will be made available for local use than at any time in the past. The employment of labor for cutting, etc. will also help support the local population to some small degree.

VI. Agricultural Value

The agricultural value of any part of the tract is negligible because of rough topography, coarse poor soil, lack of water, and short growing season. Many years ago there was a small ranch on the lower part of the

administrative site and another on the 40-acre tract of private land, but both were abandoned.

VII. Grazing Value

The value of the area as range land is low. Where the timber stand is dense, lower vegetation is very scanty; where the stand is open or lacking there is some browse but the predominating cover is downy chess. There is a notable lack of palatable grasses - either because the site is not suitable for them or they have been destroyed by overgrazing in earlier days. Grazing has never been under control, so no records of use are available. Since the establishment of the Station, sheep have been grazed through the area each spring enroute to their summer range; this use of itself was not excessive except in spots. Stray groups of cattle and horses have grazed in the area to a very small extent in late years.

As to future grazing use, it should definitely be excluded from the vicinity of the Station buildings and from the small watershed of Spring Gulch, the source of domestic water supply. Plans have been made to fence this area, which is mostly within the administrative site, whenever funds are available for the purpose (the immediate building site, about 6 acres, was fenced June 1942). Because of the limited grazing value of the land, the need for more reproduction in part of the area, and the possible desirability of excluding grazing from certain experimental plots in the future, it seems best to avoid setting up any hard and fast obligations as to grazing privileges for the tract. It lies within a "general use" area, where the Forest Service actually owns very little of the land (although nominally within the Boise National Forest) and thus has not made specific allotments. At least until further experiments are undertaken there is probably no objection to informal continuation of light grazing use as described above.

VIII. Mineral Value

Essentially the same statements could be made for this area as for the Bannock and Pine Creek Divisions in the atlas report. There is little possibility of any mineral values of importance, for an area as near as this is to rich placer and vein gold deposits must have been thoroughly and repeatedly combed by prospectors, yet without effective entry or development. At the present time one occupied placer claim lies partly in the extreme northwestern corner of the tract, but the miner has recovered practically nothing from his small workings and will probably abandon it before long.

IX. Value of Area for Other Public Uses

No other potential public uses are apparent. The area has no possibilities whatever as a site for hydroelectric power development or for an irrigation reservoir. It has very little attraction for public camping or recreation because of its topography and the lack of water.

X. Transportation Facilities

Since the atlas report was written, an oiled highway on water grade has been completed from Boise to Idaho City (43 miles), making the Station only about one hour's drive from Idaho's capital and largest city. The main road and stage route from Idaho City to Centerville and other points "across the basin" parallels the stream in Slaughterhouse Gulch through the tract. This enhances the value of the area for forestry demonstration purposes, although the situation is not ideal in this respect because of the road's location in a canyon bottom where about all that can be seen for some distance is stream vegetation on one side and a high road cut on

the other. Side roads eventually be developed to supplement and extend the few old spur roads now present; some of these would be located to facilitate viewing of the stand improvement and other work by the public. The nearest rail shipping point now is Boise.

XI. Public Sentiment

The addition apparently has met with complete approval by the local public. The work of the Boise Basin Experiment Station and the administration of the Experimental Forest have met with the favor of the local people and they were not averse to seeing its facilities expanded. Since no reduction of the tax base was involved, no opposition on this score came from taxpayers or county officials. Earlier disapproval of the proposed addition by two or three individuals was due largely to misunderstanding regarding wood cutting and to an innate opposition to national forest additions; it was overcome by "education."

XII. Protection

The ranger at Idaho City handles fire protection of the tract, in common with other parts of the Boise National Forest. The Station has a memorandum of understanding with the Boise Forest regarding fire protection and the use of Experiment Station personnel on fires. The cover on the area would be rated as only a medium hazard, as there is little debris and in many parts the fire-carrying ground cover is scanty. However, there is a special hazard in the cover of downy chess on the southerly slopes and openings, which is very inflammable and favors rapid spread of fire. The stand is also not immune to destruction by a holocaustic fire such as swept parts of the Basin in 1931 and 1934. A special threat to this territory lay in the debris-covered logged-over areas of Warm Springs Gulch and vicinity to the west; since it has now been some 14 years since logging there, the extra danger should be progressively subsiding. The further construction of firebreaks, such as the one started near the Station, should be a part of the future program to help protect investment in plant and experiments. Perhaps the driving of sheep can be guided to help in the maintenance of firebreaks.

XIII. Improvement Possibilities

The Station buildings on the area are located to good advantage and will serve the needs of a research project of reasonable size. A good network of roads and firebreaks can be developed on the area. The need for some additional fencing to protect the water supply, etc. has been mentioned. One other improvement needed at the Station is the provision of an additional water supply to allow irrigation and therefore better landscaping and maintenance of grounds and possibly tree plantings. The acquisition of a large part of Slaughterhouse Gulch may be helpful in this respect.

XIV. Relation of Area to the Future Use of the Resources of Adjacent National Forest Land

The administration of this tract as an experimental forest should in no way interfere with the use of resources on adjacent lands. The program of experimental operations need not involve surrounding timber stands at all, though it is probable that they will be correlated to any extent that seems advantageous at the time. Logging of nearby lands should not disturb experimental plots, etc., although hauling may be over the Centerville road and some of the Station's roads. The unit was not included in the plan for the Boise Basin Working Circle, so even the computations for that are not affected. The fact that

The situation with respect to the grazing resource has been mentioned under that heading; as more definitely controlled practices are adopted for this general territory in the future, it seems that any use or restrictions on use in the experimental forest can be correlated without difficulty. The primary use of the tract - for experimental purposes - should govern in case of any conflicting interests but none can be foreseen at this time.

Approved 1943

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Chief, Forest Service

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June 4 1957

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